

ABSTRACT OF THE DISCLOSURE

A charging system for simultaneously charging the batteries of a plurality of battery powered vehicles. The charging includes one or more DC-DC power converters having one or more charging ports configured to plug into the batteries. The DC-DC power converters are each configured to selectively connect to more than one charging port to selectively provide for higher port power levels. The DC-DC power converters connect to an AC rectifier through a DC bus. The AC rectifier connects to an AC power source having a limited power rating. The AC charging system also has a controller that controls the operation of the DC-DC power converters such that the total power draw on the AC rectifier does not exceed the power rating. The system is further configured such that the DC-DC power converters can drain selected batteries to obtain power for charging other batteries, thus allowing for batteries to be cycled.